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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,431	02/27/2004	Scott A. Leman	27581/01367.1	7015

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EXAMINER	
RIDDLE, KYLE M	

ART UNIT	PAPER NUMBER
3748	

DATE MAILED: 11/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

NT

Office Action Summary	Application No.	Applicant(s)	
	10/788,431	LEMAN, SCOTT A.	
	Examiner	Art Unit	
	Kyle M. Riddle	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,17-28 and 35-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,17-28 and 35-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 3-14, 17-20, 22-40 are rejected under 35 U.S.C. 103(a) as being obvious over Rammer et al. (U.S. Patent 5,692,469).

Re claims 3-8, 12, 17, 18, and 20, Rammer et al. disclose an engine braking system comprising:

- an outlet valve 1 disposed in a port connected to an engine cylinder (column 6, lines 10-15; Figures 3 and 4);

- a fluidically driven valve actuator or control device 5 that also controls the flow of fluid (column 6, lines 36-67 with column 7, lines 1-15; Figures 3 and 4);

- a source of fluid at a predetermined pressure in communication with the control device 5 (column 7, lines 4-10), a force generated by the source of pressurized fluid being sufficient to take up lash between the control device 5 and outlet valve 1 (column 3, lines 24-29, column 4, lines 31-36, column 10, lines 1-8);

- an engine driven mechanical linkage or conventional camshaft with cam mounted proximate outlet valve 1 and adapted to move the valve 1 into an open position (column 6, lines 7-15);

- an actuator cylinder or bore 8 with a plunger or drive piston 6 disposed therein (column 6, lines 43-47);

- the control device 5 including an actuator piston or drive piston 6 disposed in an actuator cylinder or bore 8, having a rod or portion adapted to maintain the outlet valve 1 in an intermediate position between a closed position and an open position in a hydraulically locked configuration (column 6, lines 43-47, column 7, lines 32-47; Figures 3 and 4);

- a coil spring or closing spring mounted to the outlet valve 1 to bias the valve toward a closed position (column 6, lines 12-15);

- wherein the source of pressurized fluid is lubricating oil (column 7, line 5);

- maintaining the intermediate position for a predetermined period of time (abstract; column 5, lines 20-23, column 10, lines 29-33).

Re claims 9-11, 13, 14, 19, 22-28, Rammer et al. disclose an engine braking system comprising:

- filling the pressure space 15 with fluid and preventing backflow with control or check valve 17 (column 7, lines 38-41);

- removing the flow of fluid by shutting the exist opening of the relief duct 20 and check valve 17 to cause the driven piston 16 to be locked hydraulically in an intermediate position (column 7, lines 38-47).

Re claims 29-34, Rammer et al. disclose intermediately opening the outlet valve during the intake or induction stroke to allow a portion of exhaust gas to be reintroduced to the cylinder (column 10, lines 19-25) and restoring fluid communication through relief duct 20 of control

device 5 to disengage the actuator allowing the outlet valve to close (column 7, lines 56-67 with column 8, lines 1-9).

Re claims 35-40, Rammer et al. disclose intermediately opening the outlet valve during the intake or induction stroke to allow a portion of exhaust gas to be reintroduced to the cylinder (column 10, lines 19-25; Figure 1).

They, however, fail to disclose the valve system being used for an intake valve and holding the intake valve open during a portion of the compression stroke.

Rammer et al. suggest opening the exhaust valve during the compression stroke (column 7, lines 52-55), and the use of valve actuation systems designed for one type of valve (exhaust) is well known in the art to be applicable to the other type of valve (intake), and therefore the use of the valve system of Rammer et al. for intake valves would be a matter of obvious choice to one of ordinary skill depending on space considerations, exhaust gas recirculation, and desired engine performance.

3. Claims 1, 2, 21, 41, and 42 are rejected under 35 U.S.C. 103(a) as being obvious over Rammer et al. in view of Israel et al. (U.S. Patent 5,996,550).

Rammer et al. disclose the invention cited above, however, fail to disclose the source of pressurized fluid being insufficient to move the valve element to the open position.

Rammer et al. disclose that the intermediate position is a catching position with the pressurized fluid being of a predetermined pressure (column 7, lines 5-15), and Israel et al. teach a low pressure system through check valve 302 and solenoid valve 310 to open valves 200 (column 7, lines 52-67 with column 8, lines 1-5), the hydraulic actuating means being less than the mechanical actuating means (column 12, lines 12-16). It would be a matter of obvious

choice to one of ordinary skill that the intermediate position of the hydraulic means of Rammer et al., being a catching position, could have a predetermined lower pressure fluid as taught by Israel et al., and this low pressure fluid being insufficient to move the valve into an open position. Such an insufficient force on the hydraulic actuating device would be obvious to either Rammer et al. or Israel et al. depending on fluid leakage, spring biasing, mechanical wear, and performance desirability.

Response to Arguments

4. Applicant's arguments filed 28 August 2006 have been fully considered but they are not persuasive.

5. Applicant has amended independent claims 3, 9, 12, 22, and 25 to specifically actuate an intake valve and argues throughout the remarks, and particularly on page 14, that Rammer et al. only disclose an exhaust valve actuation system, and that the Examiner's assertion is not valid that valve actuation systems used for one type of valve can be used for the other type of valve. Examiner disagrees. Many valve actuation systems have been previously described for one type of valve (intake or exhaust) with the caveat that it may be used for the other type of valve. The following are a few examples for demonstration purposes and not relied upon for the rejection: U.S. Patent 6,575,126 shows a valve actuation system for one type of valve and states that it would work for the other type of valve (column 7, lines 51-63); U.S. Patent 6,308,690 also shows a valve actuation system for one type of valve and states that it would work for the other type of valve (column 7, lines 54-65); U.S. Patent 6,237,551 shows a valve actuation system for either intake or exhaust valves (column 1, lines 3-7); and U.S. Patent 5,839,453 shows an exhaust valve actuation system that is understood to be alternatively applied to an intake valve

(column 3, lines 24-28). With regard to the arguments on page 16 concerning independent claims 1 and 21 stating there is not proper motivation for combining the low pressure system of Israel et al. in the braking system of Rammer et al., the examiner also disagrees. Both Rammer et al. and Israel et al. disclose hydraulic actuating means providing for valve lift braking, the combination of the two references being proper in that the two inventions function substantially the same.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle M. Riddle whose telephone number is (571) 272-4864. The examiner can normally be reached on M-F (07:30-5:00) Second Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kyle M. Riddle
Examiner
Art Unit 3748

kmr

THOMAS DENION
SUPERVISORY PATENT EXAMINER
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